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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,881	11/16/2001	Takashi Seki	216231US2S	7596
22850	7590	01/26/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			BAYARD, EMMANUEL	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,881

Applicant(s)

SEKI ET AL.

Examiner

Emmanuel Bayard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7,11,12 and 17 is/are rejected.
- 7) ☒ Claim(s) 3-6,8-10,13-16 and 18-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/16/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 7, 11-12 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki U.S. patent No 6,044,106.

As per claims 1 and 11 Suzuki teaches an OFDM transmit signal receiver comprising: a demodulation circuit configured to receive an OFDM transmit signal containing an information carrier (see figs. 12 and 14 elements 137 and 410), an additive-information transmission carrier, and a reception-synchronization pilot signal to convert said information carrier, said additive-information transmission carrier, and said reception-synchronization pilot signal into frequency-axial data, said information carrier transmitting information data, said additive-information transmission carrier having a lower multi-valued modulation degree than said information carrier, and said reception-synchronization pilot signal having a lower multi-valued modulation degree than said information carrier (see col.8, lines 10-50 and col.13, lines 10-30); a determination circuit (see fig.14 element 431). Note that the determination circuit receives differential signal from the differential demodulator therefore Suzuki determination circuit is the same as the claimed (differential detection circuit) (see col.13, lines 36-45) configured to conduct detection using a detection-subject symbol of a plurality of symbols indicated at

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a predetermined interval in the same frequency range and using a symbol ahead said detection-subject symbol by a predetermined time in at least either one output of said additive information transmission carrier and said reception-synchronization pilot signal output from said demodulation circuit (410); and a first S/N ratio generation circuit (see fig.14 block having elements 433, 434, 435-436 and col.13, lines 48-60 and col.14, lines 5-30) configured to generate an S/N ratio based on a detection output provided from said differential detection circuit, said S/N ratio indicating a reception quality of said OFDM transmit signal.

As per claims 2 and 12, Suzuki does teaches wherein said demodulation circuit comprises a quadrature detection circuit configured to detect said OFDM transmit signal in an orthogonal manner and a fast Fourier transfer circuit (see fig.14 element 134 and col.8, lines 11-50 and col.11, lines 8-25) conducting fast Fourier transform operations to convert time-axial data of a signal output from said quadrature detection circuit into frequency-axial data.

As per claims 7 and 17, Suzuki does teaches wherein said first S/N ratio generation circuit comprises a detection circuit configured to obtain a squared value (I variance value) and col. of a difference between said detection output I signal and a reference I signal and a squared value (Q variance value) of a difference between said detection output Q signal and a reference Q signal, and an averaging circuit configured to obtain an average by averaging said I and Q variance values in both a frequency direction and a time direction (see fig.14 elements 434, 437 and col.8, lines 12-50 and col.13, lines 56-67).

Allowable Subject Matter

3. Claims 3-6, 8-10, 13-16 and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to anticipate or render obvious the following recited features: a second S/N ratio generation circuit configured to generate an S/N ratio based on an equalization output provided from said equalization circuit, said S/N ratio indicating a reception quality of said OFDM transmit signal; and a selection circuit configured to select either one of said S/N ratio output from said first S/N ratio generation circuit and said S/N ratio output from said second S/N ratio generation circuit based on said S/N ratio output from said second S/N ratio generation circuit as recited in claims 3-4, 10, 13-14 and 20. A correction circuit configured to conduct correction to reflect a carrier deterioration due to said carrier interference on said S/N ratio output from said first S/N ratio generation circuit in accordance with an output provided from said carrier interference detection circuit as recited in claims 5-6 and 15-16. Said second S/N ratio generation circuit comprises a detection circuit configured to obtain a squared value (I variance value) of a difference between said equalization output I signal and a reference I signal and a squared value (Q variance value) of a difference between said equalization output Q signal and a reference Q signal, and an averaging circuit configured to obtain an average by averaging said I and Q variance values in both a frequency direction and a time direction as recited in claims 8-9 and 18-19.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tsuruota U.S. patent No 6,192,056 B1 teaches a demodulating apparatus.

Sonnenschien et al U.S. Patent No 6,130,859 teaches a method and apparatus for carrying high data rate.

Minami et al U.S. patent No 6,587,510 B1 teaches a control information transmitting method.

Suzuki U.S. Patent No 6,055,415 teaches a communication method and communication apparatus.

Taura et al U.S. patent No 6,148,045 teaches a digital broadcast receiver.

Tsujishita et al U.S. patent No 6,341,123 B1 teaches a digital audio receiver.

Uchiyama et al U.S. Patent No 6,744,828 B1 teaches a receiving apparatus.

Ohkubo et al U.S. patent No 5,959,965 teaches a digital receiver.

Seki et al U.S. patent No 5,771,224 teaches an OFDM transmitting system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM)
Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone


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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

1/24/05

Emmanuel Bayard
Primary Examiner
Art Unit 2631


EMMANUEL BAYARD
PRIMARY EXAMINER